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Up to the minute news from the worlds of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable. May be reproduced providing credit is given to The W5YI Report.

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- Dayton HamVention News
- Packet Radio
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- and more...

HamNet thanks Fred Maia, W5YI, for permission to excerpt this Electronic Edition of his W5YI Report. The full ten-page biweekly newsletter is available by mail for \$18 per year from Fred at PO Box 10101, Dallas, TX 75207.

DAYTON HAMVENTION '84 - Huge Success

Around 21,000 avid amateurs enjoying splendid weather crowded the Hara Arena this year for the 33rd annual Dayton GamVention. Reports from exhibitors as well as flea market operators indicated record sales! Smiling amateurs loaded with new purchases and flea market treasures confirmed that visitors were not just looking.

Around 350 applicants took the amateur exams under the new VE (Volunteer Examiner) program. This was the first large scale test session under the new amateur self-testing concept. The exams were held at the Maridale High School close to the arena. About 600 Technician and General Class Elements were administered. Observers were on hand from several other VEC's (Volunteer Examiner Coordinators) and the ARRL to observe the process and obtain first hand experience.

The reorganized flea market operation drew high praise from the exhibitors. All spaces were reserved through advance sales. The 1280 spaces on about 15 acres (all on black top) were sold out a month prior to the

HamVention.

Some 30 forums covering just about every aspect of amateur radio drew good crowds as usual. The new forum rooms isolated from other HamVention activities were a great improvement and released the area previously used for about 50 additional exhibitors.

About 1,250 people attended the Grand Banquet on Saturday evening April 28th, 1984, to honor this year's award winners and hear former ARRL president Harry Dannals (W2HD) speak on his favorite subject, Amateur Radio.

This year a new category was added to the HamVention banquet awards. In recognition of the fact that amateur radio contributed greatly to the technical advancement of electronics and that amateurs are still advancing the state of the art, the Board decided to add the Technical Award. The award recognizes the technical contribution the individual has made.

This year's winners are:

Amateur of the Year: Dave Bell (W6AQ). Dave was recognized for applying his movie making talents to furthering amateur radio. Dave has produced many of the promotional films currently available on amateur radio.

Special Achievement Award: Ethel Smith (K4LMB) was recognized for her successful efforts to bring women into amateur radio. As founder of the YLRL, she has been an inspiration to many a young lady.

Technical Achievement: Lyle Johnson (WA7GXB) was recognized for his technical contribution in the packet radio area - especially the development of the Terminal Node Controller.

In addition to the three HamVention Awards, a new Dayton Amateur Radio Association award was presented during the ceremony - the DARA Distinguished Service Award went to Robert S. Zimmerman (W8ZM). Bob was recognized for his many years of dedicated service to the Dayton Amateur Radio Association.

The winner of the main prize (a complete Drake TR-5 station) was Camille S. Marie (W8EPR) of Pikeville, Maryland. This year's prize chest broke all records with about \$43,000 in prizes awarded to the lucky ticketholders over the three day period. The exhibitors were especially generous this year.

The top prize winners:

Complete ICOM IC-751 station (including the 2 KL linear amplifier): Catherine Hodson, (XYL of W9HOT), Greencastle, IN.

Complete Kenwood TS-430S station and accessories: James Leonard of Aliquitta, PA (W3GQT).

Solarex Photovoltaic System to Thomas Jenkins (N9AMR) of Indianapolis, IN.

Drake L-& Linear Amplifier was won by Walter Caudle of Connersville, IN.

The Ladies Alternative Activities Program, as usual, had many outstanding attractions and was very well attended. The parting comments of the visitors this year were highly complimentary.

PACKET RADIO - Mode of the Future

Every year at Dayton, I try to find a new technology sneaking into amateur radio. Code readers, computer-interfaced RTTY, amateur earth stations were new to me in prior years. Last year, I saw AMTOR error-free RTTY terminals. This year packet radio emerged with commercial offerings by both AEA (Advanced Electronic Applications, Inc.) and TAPR, the Tucson Amateur Packet Radio Corporation (PO Box 22888, Tucson, AZ 85734).

TAPR is a non-profit research and development group comprised solely of volunteers who are dedicated to the development of packet radio technology for the amateur radio community. It was formed in 1981 originally as a club and incorporated in 1982. From the beginning, the intention was to create an inexpensive way for hams to participate in this mode of communication.

Dayton attendees were very interested in it, but few seemed to know what it was. After the banquet which honored (among others) Lyle Johnson, WA7GXD, for his amateur packet radio development work, I went by the TAPR booth and spoke to Lyle to learn about packet radio.

Packet radio is a means of digital communication not too much unlike RTTY or AMTOR except (at 1200 baud) about 15 QSO's can be supported on a packet channel - each having the equivalent of 60 WPM RTTY. A very efficient use of point-to-point, rather than a broadcast medium in that it is addressable to a particular terminal.

AMTOR is a 3-character self-checking communications system. Packet radio, on the other hand, has 128 ASCII character "packets" each with an address "header". Like AMTOR, it has an error-checking mechanism with automatic repeat if a damaged message is transmitted.

To operate packet radio you need a transceiver, a terminal (such as a personal computer) and a controller to direct the message to your terminal or retransmit it further down the line. Packet radio not only operates on VHF, but on HF... even through satellites such as AMSAT OSCAR 10 and PACSAT - a new satellite designed for packet radio.

PACSAT will have a microprocessor and 4 million bytes (characters) of memory. A ground station can send a message intended for another ham to the satellite. The bird will store the message in its memory until the other ham checks in and retrieves his messages... sort of a Buck Rogers "flying mailbox".

PACSAT will be in a low earth polar orbit (400-600 miles high) providing coverage of the entire earth. Because it will be in low orbit and because it will use a form of wide shift FSK, there will be no need for large steerable antennas and doppler correction. This makes automatic operation very simple and relatively inexpensive. You will need only about ten watts and a ground plane antenna to reach the satellite.

The AEA PKT-1 Packet Controller or the TAPR TNC allow you to "digipeat" your messages to their final destinations through up to eight separate digital packet repeaters. Every packet radio station is actually an unattended repeater with automatic CW ID. If the message isn't for you, it is further retransmitted to the next nearest packet station and on the call sign names in the header.

Cost of the controller is in the \$175 to \$350 range. TAPR's is in kit form and is one of the finest products I have ever seen when you consider that it was designed and produced by amateur volunteers - truly a very professional job. The documentation and workmanship is absolutely marvelous!

Packet radio isn't new (although new to me!). As early as 1978, Canadian amateurs (whose government had the early foresight to allow other than the Morse and Baudot codes) were communicating via packet radio. (See 73 Magazine, December 1978, page 192). It wasn't until our FCC allowed ASCII that US amateurs took up the technology seriously. It is clearly the mode of the future and the DARA was clearly "on target" in honoring Lyle Johnson, WA7GXD, president of the TAPR Corporation for his development work.

NEW AMATEUR TESTS ISSUED

The FCC has re-issued the Novice Amateur Radio Operator License (Element 2) examination to coincide with recent changes in Part 97 Rules. The new NOvice Test question edition is dated February 1984 and replaces the July 1983 version.

In addition, the Commission had released the Advanced (Element 4A) and Amateur Extra Class (Element 4B) test questions. These were supposed to have been ready in time for the Dayton HamVention, but were still at the printers when Johnny Johnston (W3BE), FCC Personal Radio Branch Chief came to Dayton. He mailed them to me as soon as he returned to Washington.

Since all question lists have now been developed, the new volunteer

examination program can now proceed in its entirety. Up until now, only Technician and General Class examinations could be given under the new (Tech and up) VE program. The Technician Class through Amateur Extra volunteer ham exam program is completely different from that of the Novice.

The Element 4A (Advanced Class) questions consist of:

Sub. Total

Sec. Questions Subject To Be Selected:

4A-A 60	Rules & Regulations	6
4A-B 10	Amateur Radio Practice I	1
4A-C 20	Radio Wave Propagation	2
4A-D 40	Amateur Radio Practice II	4
4A-E 100	Electrical Principles	10
4A-F 60	Circuit Components	6
4A-G 100	Practical Circuits	10
4A-H 60	Signals & Emissions	6
4A-I 50	Antennas & Feedlines	5

Total: 500 Questions of which 50 are selected. Passing score is 37 correct out of 50.

The Element 4B (Amateur Extra Class) questions consist of:

Sub. Total

Sec. Questions Subject To Be Selected:

4B-A 80	Rules and Regulations	8
4B-B 20	Operating Procedures	2
4B-C 10	Radio Wave Propagation	1
4B-D 30	Amateur Radio Practice	3
4B-E 70	Electrical Principles	7
4B-F 50	Circuit Components	5
4B-G 60	Practical Circuits	6
4B-H 30	Signals & Emissions	3
4B-I 50	Antennas & Feedlines	5

Total: 400 Questions of which 40 are selected. Passing score is 30 correct out of 40.

A booklet containing the FCC Amateur Radio Operator Study Guide and all 1,600 actual test questions for all ham classes (Novice through Extra) is available for \$2.00 plus 50 cents postage from:

The W5YI Report - Test Questions
PO Box 10101
Dallas, TX 75207

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